Claims

1. A cattle feed additive characterized by the combination of fibrolytic enzymes having enzyme activity and one or more species of lactobacillus bacteria having colony forming units wherein the ratio of enzyme activity to colony forming units has a value of at least about 1 unit of digestive enzyme activity to every 10^5 colony forming units.

2. The cattle feed additive of claim 1 further characterized by the ratio of enzyme activity to colony forming units has a value of at least 2 units of enzyme activity to every 10^6 colony forming units.

3. The cattle feed additive of claim 1 further characterized by the lactobacillus bacteria being selected from the group comprising *Lactobacillus Acidophilus, Lactobacillus Plantarum,* and *Lactobacillus Brevis*, and mixtures thereof.

4. The cattle feed additive of claim 1 further characterized by the fibrolytic enzymes being selected from the group comprising cellulases, xylanase, hemi-cellulase and mixtures thereof.

5. A method of making cattle feed characterized by replacing previously used bypass protein in the animal feed with a sufficient amount of a mixture of one or more specie of lactobacillus bacteria and one or more types of fibrolytic enzymes, to produce at least enough microbial protein to be at least equivalent to one half pound (.23kg) of animal protein fed to each of the cattle per day, assuming that each of the cattle are mature and of an average weight for cattle.

6. The method of claim 5 further characterized by the lactobacillus bacteria being selected from the group consisting of *Lactobacillus Acidophilus, Lactobacillus Plantarum,* and *Lactobacillus Brevis*, and mixtures thereof, and the protein byproducts replaced are selected from the group consisting of nerve, brain, blood, bone and meat containing byproducts.

7. The method of claim 5 further characterized by the lactobacillus bacteria being a mixture of *Lactobacillus Acidophilus, Lactobacillus Plantarum,* and *Lactobacillus Brevis.*

8. The method of claim 5 further characterize by the one or more digesting enzymes being selected from the group consisting of xylanase, and cellulases derived from *Trichoderma viride, Aspergillus oryzae, Aspergillus niger,* and *Bacillus subtilis.*

9. The method of claim 5 further characterized by the one or more digesting enzymes being a mixture of xylanase, and cellulases derived from *Trichoderma viride, Aspergillus oryzae, Aspergillus Niger,* and *Bacillus subtilis.*

10. A method of converting cattle feed to microbial protein in cattle characterized by incorporating a sufficient amount of a mixture of one or more species of lactobacillus bacteria and one or more types of digesting enzymes into cattle feed to form at least a sufficient amount of microbial protein to be at least equivalent to one fourth pound (.11 kg) of animal protein fed to each of the cattle per day.

11. The method of claim 10 further characterized by the lactobacillus bacteria being selected from the group consisting of *Lactobacillus Acidophilus, Lactobacillus Plantarum,* and *Lactobacillus Brevis,* and mixtures thereof and the amount of microbial protein formed to be at least equivalent to one half pound (.23kg) of animal protein fed to each of the cattle per day.

12. The method of claim 10 further characterized by the lactobacillus bacteria being a mixture of *Lactobacillus Acidophilus, Lactobacillus Plantarum,* and *Lactobacillus Brevis.*

13. The method of claim 10 further characterized by the one or more digesting enzymes being selected from the group consisting of xylanase, and cellulases derived from *Trichoderma viride, Aspergillus oryzae, Aspergillus niger,* and *Bacillus subtilis.*

14. The method of claim 10 further characterized by the one or more digesting enzymes being a mixture of xylanase, and cellulases derived from *Trichoderma viride, Aspergillus oryzae, Aspergillus Niger,* and *Bacillus subtilis.*

15. Cattle feed characterized by the daily ration of feed fed to each head of cattle containing a sufficient amount of one or more strains of lactobacillus bacteria and one or more types of digesting enzymes having an enzyme activity of at least 10^4 digestive units per oz (28.35 g) to convert the cattle feed and the bacteria in the rumen to microbial protein.

16. The cattle feed of claim 15 further characterized by the enzymes being present at a level sufficient to produce an enzyme activity of from 10^4 to 10^8 units per gram of cattle feed and the lactobacillus bacteria being present at a level sufficient to increase the yield of microbial protein in the rumen.

17. The cattle feed of claim 15 further characterized by microbial protein being produced in the cattle by interaction of the bacteria and enzymes, the bacteria being present at a level of from 10^6 to 10^{10} colony forming units per gram of cattle feed and enzymes being present at a level sufficient to produce a digestive enzyme activity of from 10^6 to 10^7 units per gram of cattle feed..

18. A method of reducing runoff of water soluble nitrogen compounds from cattle manure characterized by incorporating a sufficient amount of a mixture of one or more species of lactobacillus bacteria and one or more types of digesting enzymes into cattle feed to form at least a sufficient amount of microbial protein to be at least equivalent to one fourth pound (.11 kg) of animal protein fed to each of the cattle per day.

19. Cattle feed characterized by the feed containing a sufficient amount of one or more strains of lactobacillus bacteria and one or more types of cellulose digesting enzymes to convert the cellulose and nitrogen in the cattle feed to microbial protein having an improved amino acid balance, the cattle feed being free of a surfactant on a carrier.